

WE CLAIM:

- 5.6 A₁
1. An image module for a document scanner, the image module comprising:
- a molded housing having a datum element;
 - an imaging sensor array;
 - an array bias element urging the imaging sensor array against the datum element;
 - a transport mechanism attached to the housing.
2. The image module of **claim 1**, wherein the housing comprises a unitary casting.
3. The image module of **claim 2**, wherein:
- the sensor array has opposed forward and rearward edges; and
 - the array bias element comprises a spring clip abutting the rearward edge of the imaging sensor array to urge the forward edge of the imaging sensor array against the datum element.

4. The image module of **claim 3**, wherein:

the datum element comprises a plurality of datum ribs; and

the support element comprises a plurality of support ribs.

5. The image module of **claim 3**, wherein the imaging sensor array comprises a board having a front surface and a back surface, and a plurality of sensor elements on the front surface of the board.

6. The image module of **claim 5**, wherein the board comprises plural boards, each having a front surface and a back surface.

7. The image module of **claim 6**, wherein the plural boards are attached to one another.

8. The image module of **claim 7**, additionally comprising a resilient seal and a bottom cover attached to the housing.

9. The image module of **claim 8**, wherein the document transport mechanism comprises a drive shaft and a paper contact device.

10. The image module of **claim 1**, additionally comprising:

a lens attached to the housing above the sensor elements of the imaging sensor array;

a light filter in the light path between the lens and the imaging sensors of the imaging sensor array; and

a lamp attached to the housing.

10. The image module of claim 1, additionally comprising:

11. A document scanner comprising:

a housing having a datum element and a support element;

an imaging sensor array comprising:

a sensor board having a forward edge and a rearward edge, and a front surface and a back surface, wherein the front surface of the sensor board abuts the support element; and

a plurality of sensor elements on the front surface of the sensor board;

a spring clip abutting the rearward edge of the imaging sensor array to urge the forward edge of the imaging sensor array against the datum element;

a lens attached to the housing above the sensor elements of the imaging sensor array;

a lamp mounting on the housing; and

a transport mechanism attached to the housing, wherein the transport mechanism moves the housing and a document relative to one another.

12. The scanner of **claim 11**, wherein:

the datum element comprises a plurality of datum ribs; and

the support element comprises a plurality of support ribs.

13. The scanner of **claim 11**, wherein the housing additionally includes a side reference element, and the scanner additionally comprises a lateral spring for urging an edge of the sensor board against the reference edge.

14. The scanner of **claim 13**, wherein the sensor board includes first and second opposed side edges between the forward and rearward edges, and the lateral spring abuts the first side edge to urge the second side edge against the side reference element.

15. The scanner of **claim 11**, wherein the transport mechanism is a document transport mechanism for moving the document relative to the housing.

16. A method of assembling a document scanner, the method comprising:

providing a housing having a support element and a datum element;

placing an imaging sensor array on the support surface of the housing;

urging the imaging sensor array against the datum element;

attaching a document transport mechanism to the housing; and

attaching a bottom cover to the housing to enclose the imaging sensor array.

17. The method of **claim 16**, additionally comprising:

attaching a lens to the housing; and

attaching a lamp to the housing.

18. The method of **claim 17**, additionally comprising enclosing a resilient seal between the imaging sensor array and the bottom cover.

19. The method of **claim 16**, wherein the housing additionally has a reference element substantially perpendicular to the datum element, and the method additionally comprises urging a second edge of the imaging sensor array against the reference element.